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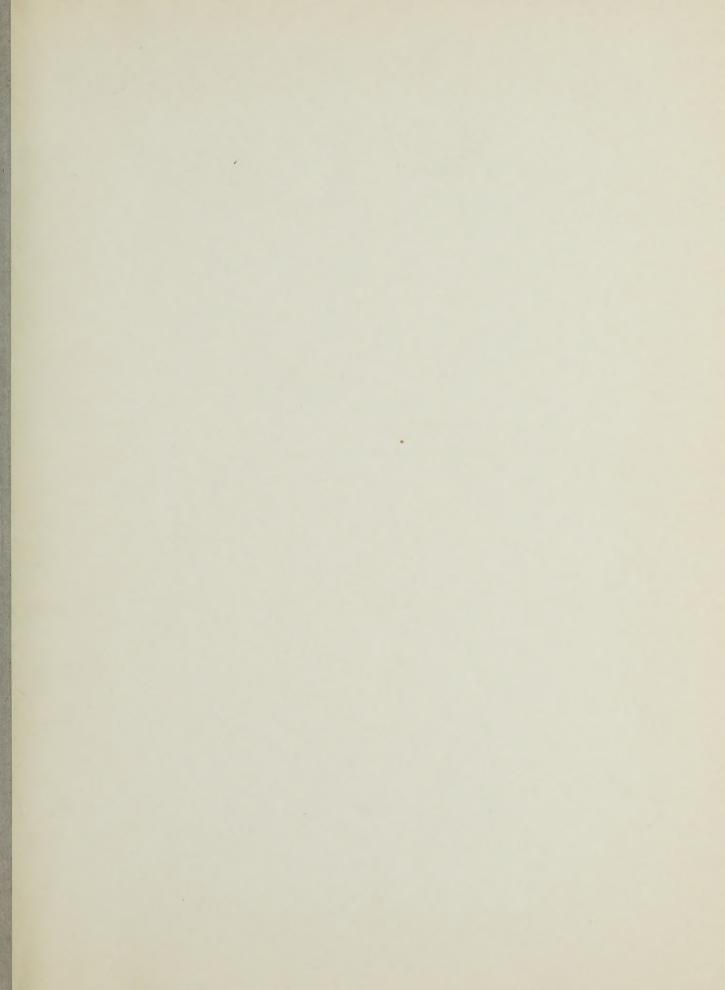
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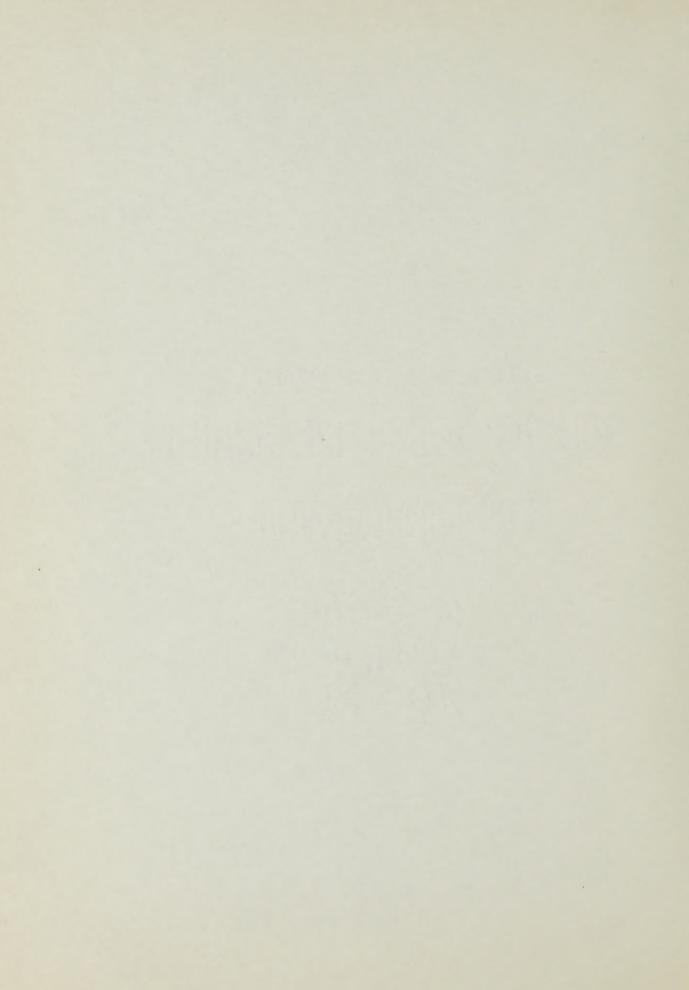
GENERAL REPORT

MUSKOKA SYSTEM

JOSEPH H. W. BOWER
SECRETARY







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HYDRO-ELECTRIC INQUIRY COMMISSION COPY FOR ENCLOSURE TO General Map Showing Location of Generating Stations, Transformer Stations and Transmission Lines of the Power Commission of Ontario

The area outlined in red shows the

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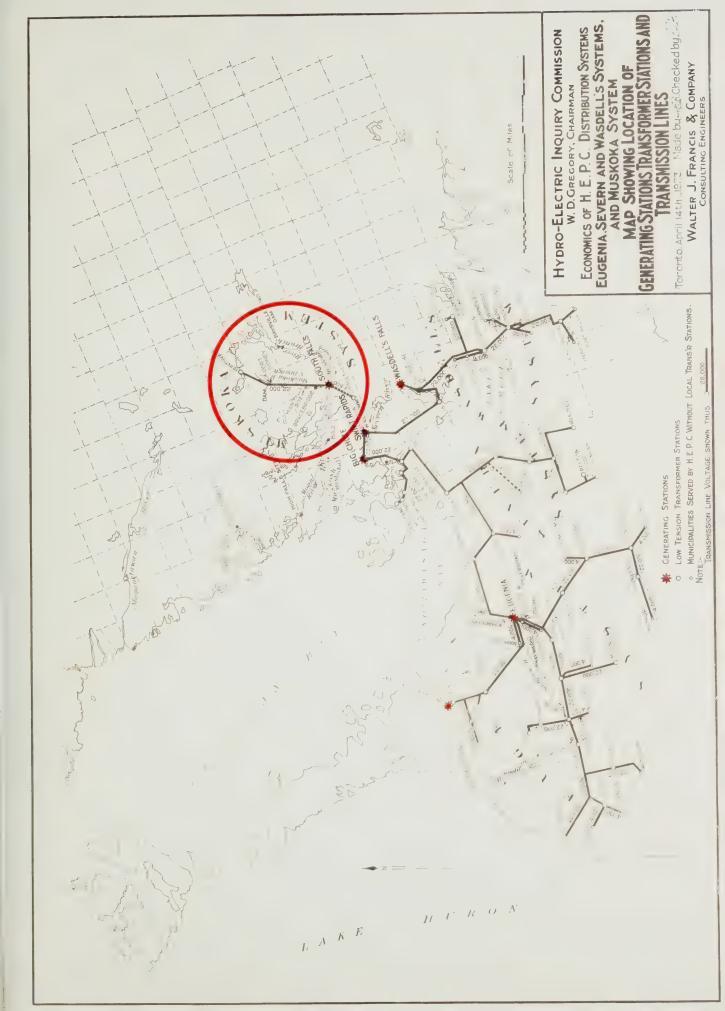
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Toronto, Ontario, August 20th, 1923.

Hydro-Electric Inquiry Commission, W. D. Gregory, Esq., Chairman, Toronto, Ontario.

re: General Report - Huskoka System

Mr. Chairman and Contlemen:-

In accordance with your instructions, a general report on the Euskoka System has been made, along the lines approved of by the Commission on January 2nd. The work has been done under my direct personal supervision as per your instructions.

pany and Hessrs. Clarison, Gordon & Dilworth, together with the report on this system by the Commission's Consulting Engineer, Mr. Walter J. Francis, have been used in the preparation of this report. No public hearing was held in connection with this system.

The report falls naturally into two parts. The first part includes sections entitled "Mistorical Skotch", "Physical", "General Sconomics" and "General Relations". These sections are largely a recital of facts. The second part of the report entitled "Summary" is merely intended to direct attention to those points which appear to require special consideration by the Commission.

Particular attention is directed to a sub-section of the report entitled "Addenda", which deals with the revision recently made in the reserve for renewals account.

All figures used in this report have been carefully checked by a representative of Messrs. Price, Waterhouse
& Company. Reports forming the basis of this report are
appended herete, and in order to facilitate reference to
the documents in question, on the right-hand margin of the
report throughout will be found abbreviated references.

Yours very truly,

Secretary

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Historical Sketch

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During the year 1909 the Hydro-Electric Power Commission of Ontario first investigated power conditions in the district now comprising the Muskoka System, with a view to supplying electrical energy to the Town of Huntsville. The results of this investigation are contained in a report to the Munit ballity of Huntsville under date of September 18th, 1909. A further report on the power possibilities in this district was made by the Commission on September 1st, 1911. In this, special reference was made to the possible development of the power site at High Falls on the North Branch of the Huskoks River.

WJF. D.4.

Following the submission of a by-law to the rate- P.W. Report payers of Huntsville which was passed on January 4th, 1915. March 29/23. and ratified by the Legislature on April 8th, 1915, a contract was made between the Commission and the Yown of Hunts-MARKET AND ville on March 10th, 1915.

WJF. p.4.

P.W. Report

Harch 29/23.

A by-law was submitted to the ratepayers of Gravenhurst which was passed on October 2nd, 1915, and ratifind by the Legislature on April 27th, 1916, and on October 25th, 1915, a contract was made between the Commission and the fown of Gravenhurst.

WJP.

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development at South Falls on the South Branch of the Muskoka River was taken ever by the Commission from the municipality of Gravenhurst. The municipality retained the transmission lines from the generating station to the town, together with the distributing station and system in Gravenhurst. The purchase of the properties at South Falls was authorized by an Order-in-Council dated November 10th, 1915.

WJF.

The engineers of the Commission, in a report dated June 28th 1955 give the results of a valuation of all of the properties included in the Gravenhurst Power System. The following excerpt shows those properties divided into four main groups for which the replacement value and the present value had been estimated. The first of these items only, namely, the generating plant, was purchased by the Commission.

Itens	Replacement Cost as at June 28th. 1915	Prosent	
Generation Transmission	\$52,158 10,120	\$39,386 4,048	
Transformation Distribution	13,050	10,362	wJF.
2018	1 = \$90,694	\$62,530	

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The engineers of the Commission, is a report of the contract of a valuation of the contract of

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ELECTRIC INQUIRY COMMISSION

In this report it was suggested that the sum of \$45.566.61 be paid to the municipality of Gravenhurst for the purchase of the generating plant which. It was estimated, had a value at that time of 339,386, and would cost \$52,156 to replace. The actual price paid, however, was \$50.596. A revaluation of the proporties was againmade, following the purchase of the development, and an amount of \$33,230.00 was put down as tangible values, the difference of \$17.366.00 being entered in the books of the Commission as intensibles.

WJF. D. 5 à 6.

The Muskoka System commenced operations on November 1 st. 1914, properating the purchased generating station at South Falls. This had at that time an installed capacity of about 480 horse-power, about 250 of which was supplied to the municipality of Gravenhurst over its transmission line. 8.8 miles in length, at the generator voltage of 6.600 volta.

WJW. D . 6 .

Plans were immediately put under way to increase the capacity of the plant to meet the demands on the system, and to provide for the future requirements.

WJF. p.6.

On August 25th, 1916, the new equipment was put into service, making available an additional 800 electrical hor so-power.

WAF. D. 6.

The transmission line from Huntsville to South Palis, a distance of about 26 miles, was completed and tested on August 15th. 1916, and on August 25th Huntsville

LECTRIC INQUIRY COMMISSION

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. Dw C received its supply of power from the Muskoka System at 22,000 volta.

WJ3.

The demand from Gravenhurst and Huntsville for power continued to increase steadily until in the year 1920 the full depacity of the South Falls generating IN SHIP AND AND THE PARTY OF THE PARTY NAMED IN station was reached. A further investigation of the undeveloped power possibilities and ultimate capacity of the South Falls site was made in that year. Towards the - press rould arrelled end of 1920, however, the demand for power from the municipality of Huntaville decreased, due to industrial diffi-Departure Printer was interculties of the Anglo-Canadian Leather Company, the largest individual consumer of lightricity on the Euskoka System. OR OTHER WARRANT OF no briefs all haven the later has The average load on the system decreased about 150 elecproperty along himse with direct tree Law every last trical horse-power in 1921, but an improvement is shown for 1922, with an average of 12 monthly, twenty-minute peaks of 1,540 electrical horse-power and a maximum yearly peak of 1.456 electrical horse-power.

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General

The Muskowa System lies north of the Severa and Wasdell's Systems. It extends about thirty miles north and south, and includes within its boundaries part of the county of Muskoka. Parts of the counties of Parry Sound and Haliburton might be served from this system if necessary.

WJF.

Speaking broadly, the Muskoka System consists of a 1,280 horse-power hydro-electric generating plant on the South Branch of the Maskoka River at South Falls, together with transmission lines and distributing stations feeding two municipalities.

Deposited of A're only on AT. Also have not have at

p.8.

Generating Station and Other Sources of Power Supply

The South Falls plant is the only generating station on the Euskoka System at present owned by the Commission.

This development is located on the South Branch of the Euskoka River, at Euskoka Village, three miles to the south of Bracebridge and about seven miles north of Gravenhurst. The first stage of the development was completed in 1904, and consisted of a concrete dam twenty feet high by eighty feet long, from which the water was led to a power house through a stool penstock three feet

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in diameter and about 1.000 feet long. The generating equipment contained in the power house was one 700 horse-power turbine utilizing a head of about 105 feet, directly connected to a 450-K.V.A., three-phase, 60-cycle, 6,600-volt generator, manufactured by the Allis-Chalmers Bullook Company, supplying electricity to Gravenhurst at the same voltage.

Name and Additions in the own

WJF. p.10

to increase the capacity of this plant and to provide for the future extension of the development. This work consisted of remodelling the forebay, installing a wood-stave pipe line and a Chart Remith of steel penstock, the extension of the power house and the tail-race, and the addition of the mechanical and electrical equipment required.

war. p.10

the old plant had to be kept in service during the extensions, the engineers state that only the superstructure could reasonably be let by contract, and that it was impossible to obtain economical tenders for the other work. The construction was therefore undertaken by the Commission under force account, except for the power house superstructure, which was let to Mesers. Witchall & Sons, Toronto. P

WJF.

It was also found necessary to raise the level of a stretch of highway upstream from the dam in order that wir. the water might be raised to its maximum economical head. p.ll.

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formed only to the property of of a strategy of highway operated from the own in series while 2000 where dealers of the related as the sociate administration and offel

The changes and additions to the substructure were completed on March 27th, 1916, and Messrs. Witchall & Sons of Porento on May 27th, 1916, completed their contract for the superstructure work, which included the construction of a concrete floor and roof in the old section of the power house. The Pacific Coast Pipe Company installed a woodstave pipe line five feet in diameter and 970 feet long, connecting it to a 30-foot length of steel penstock, constructed and installed by the William Hamilton Company of Peterborough, which company was also the contractor for one 1,060 horse-power, horisontal, single-runner, Francis type turbine, operating at 720 revolutions per minute. This turbine has a globe outing and fly wheel and is equipped with a butterfly valve. One 750-K.V.A., 5-phase, 60-cycle, 6.600-volt generator and one 20-kilowatt motor-driven exciter, together with transformers and other electrical apparatus were supplied and installed by the Canadian General Bleetrie Company. The units of this plant operate at a minimum head of 102 feet and a mean net head of 108 foot. The mean gross head at the site is about 115 feet. Three 400-E. T.A. station transformers step up the voltage from 6.600 to 22.000 volts for transmission to the distributing station at Euntsville. The power is transmitted to Gravenhurst at 5,600 volts, the generator voltage of TIP. p.11412. the South Palls plant.

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The drainage area of the South Branch of the Ruskoka River above this site is about 677 square miles and the developed water storage of the river is about 1,050 million cubic feet. Local pendage at the plant is available for daily peak operation.

WJR. P.12.

shift all a local of he down of the or this could be a The installed capacity of this plant at the present time is approximately 1,280 electrical horse-power at 80% power factor in accordance with the ordinary rating Service droperson on the same out of the Commission. It is stated, hovever, that a maximum this demotrative July Property State of 6,000 horse-power can be developed at this site with the addition of the mesessary generating equipment, for which it is understood some provision has already been WILLIAM TOWNS OF STREET NAME OF TAXABLE PARTY AND ADDRESS OF made during the period of alterations in the years 1915 THE REPORT OF A PARTICIPATION OF THE PARTICIPATION OF THE PARTICIPATE OF THE PARTICIPATE OF THE PARTICIPATION OF THE PARTICIPATE OF THE PARTICIPATION OF THE and 1916. William with the the state of the same of

WJF. p.12

Undeveloped Power Sites

the South Branch of the Muskoka River has available the largest undeveloped power possibilities in the district included in the Muskoka System. There are 1,280 electrical horse-power developed at the present time, and it is stated that about 4,000 horse-power more can be made available without the necessity of any additional structures or the further purchase of properties. Details of this site are given on page 15 of our Consulting Engineer's report.

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At High Falls on the Borth Branch of the Muskoka River, about eight miles north of the South Falls plant, and about 21 miles from the town of Muntaville, there is an undeveloped hydro-electric power site stated to have a capacity of about 1,300 water horse-power obtainable at a head of 44 feet. A dam at this point would improve the low water conditions of the hydro-electric plants owned by the muhicipality of Bracebridge, and located farther downstream on the same river. It was stated by the Commission in a report dated September 1st, 1911, that a generating plant of 1,200 harse-power installed paparity could for built of High Falls for about \$65,000. with transformer equipment at both High Falls and Huntsville to cost \$19,600, and 21 miles of transmission lines about \$51,600. The whole development was estimated to cost approximately \$136,200, or equivalent to a capital cost of \$114 per horse-power developed for 1911 conditions. The proximity of this site to the existing high voltage transmission line from the South Falls generating station to Huntsville would permit of the parallel operation of the South Falls plant and a plant at High Falls with the construction of only about one mile of additional transmission The elimination of this item, together with the cost of transformers at Huntsville, would be equivalent to about \$70,000. This would leave only the plant and a mile or so of line to be built, and allowing for increased costs since

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at film Falls on the Server Branch of the which days one as alter while biggs from profit expension pleate and about it withe deer are bosen to burnerille, of Direct deposit of the market according to the property of will not be seen and so many a man a fact that he seem as a seem private that few return a suitte can be some or the configurate and the overest the control of the second of t THE RESIDENCE ADDRESS OF THE SECOND STREET, THE PARTY OF THE PARTY OF the democrates he a veger dated theresher lets, 1914, nellarged winequarent collis be small mentioners is that sayasiny centa be believed to a contract the contract to the c should be will full first to from the samulaness diffe newli columbranes to makin il dem gons, the Pean of milly The second secon Carlos as a Control of a Thinky Link a Lord of Control of the Cont on no first him to III is to the first for the training the contract of the co mariar Sald as little all or offer alift he galdarway to " artists and present a first discussion and and a size invested of the coloring inferred and le tipter bires stilve tark of -ned and drive allowed they are raise a tank santy aliah alone retreament from the ball of the area gion to be related to The middle and a second and a second and a second a second a second While of temperature of these politioned so expenditurely to as we will a new chalg and give even bluce while a child of sends opens haddened our patractic and exited on or said he

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1911 the development might possibly prove economically

feasible on further investigation.

On the Muskoka River, at the outlet of Lake Muskoka and about 10 miles from Georgian Bay, are located two Falls known as Moon Chute, 10 feet head, and Bala Falls, 20 feet head. Reports to the Commission of Conservation of reconnaissance surveys made some years ago indicate that these two falls might be developed together to give about 2.500 water horse-power at a minimum of 50 feet head. A devalopment at this site would probably control the level of the Euskoka Lakes making available a very large pendage above the dams, but It is Loubtful whether this could be utilized as a commercial peak load plant due to the fact that fluctuations of the water level would be injurious to the use of these lakes as summer resorts, which purpose they serve extensively at the present time.

D.14.

About five miles farther downstream on the same river, commences a series of four falls known respectively as First and Second Fulls, 20 feet head; Third Fall , 12 feet head; Fourth Fall, 50 feet head; and Righth Fall, 54 feet head. These four falls aggregate about 96 feet total head, and a development at this site would have the benefit of the Lake Muskoka storage. A plant of a few thousand horse-power might possibly be installed at this sate if the local construction conditions prove feasible and economical, War. upon further investigation.

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There are also two possible power sites on the Moon River which also drains Lake Muskeka a short distance north of the Muskoka River. These are as follows: A spries of five rapids is located about 15 miles from the source of this river, and are known as Gurtain Chutes, Boven Sisters Rapid, Knife Rapid, Annie Rooney Hapid and Island Fortage. and have a total head of 58 feet, and a combined capacity of about 2,000 or 3,000 horse-power. About five miles downstream from this site, near the mouth of the Moon River where it empties into Georgian Bay, there are two falls within a short distance of each other, known as High Falls and Twin Falls. These have a combined head of 60 feet and it is stated that a development at this site would also have available about 2,000 or 5,000 horse-power. Very little inthe section through formation of value is available for these sites. ARREST THREE PARTY NAMED IN

WAY. p.15.

Miscollameous Power Plants in the District

A table giving the location, size and ownership of the various plants in the district of the Muskoka System is given on page 16 of our Consulting Engineer's report.

COLUMN TWO IS NOT THE OWNER, THE PARTY NAMED IN

It is stated that the hydro-electric plants owned by the municipality of Bracebridge are now being operated to full capacity and that a request for estimates on the dost of additional power has been made to the Commission.

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Noon Piror which wise dra Lake Maskers a short distance north of the Mess.

Of five rapids is located about 15 miles from the source of this river, a second about 15 miles from the source of this river, a second is feet, and a combined capacity and have a terming a second from the combined capacity and have a terming and the second from the second

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Transmission Lines

Up to October 31st. 1921, the Commission had constructed a total of 26.32 miles of high voltage transmission lines, supplying the municipality of Huntsville at 22,000 volts from the South Falls generating station.

wiles in length, delivers power to the town at 6.600 volts. This line was constructed by the municipality and is still owned by it. The transmission system is constructed on wooden poles throughout and presents no extraordinary features.

WJF. p.16.

Transforming & COPY Distributing Station

The transmission line feeds the municipality of Muhtsville at lew voltage through the substation located in that town. The capacity of the transformers is 900 K.V.A., stepping down the voltage from 22,000 to 2,300 volts, and to 575 volts.

The municipality of Gravenhurst does not require a high voltage transforming station as it receives power at 6.600 volta, the voltage of the generators at the South Falls plant, and has its own municipal substation reducing the voltage to 2,200 volts for distribution in the municipality. p.17

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Local Distributing Systems

There are no municipalities on the Muskoka System in which the Commission distributes retail power to the consumers. The Commission acts as a wholesale distributor only and in both of the municipalities the electricity is distributed by the municipality itself. It is understood that the accounting for both of the municipalities of the system is done in accordance with the standard accounting system of the Commission, and the details for the various municipalities are given in War. p.17. the Annual Reports.

A map showing the location of the generating station and transmission lines in the system forms the the same of the sa frontispiece of this report. ARRAYSIS AND REPORTED THE THE PARTY OF THE P

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Capit.1 Investment

in October 1915, the Commission purchased, from the town of Gravenhurst, a power development which consisted of certain lands, storage dans, power house, generating equipment, etc., situated at South Falls on the South Branch of the Buskoks River for \$50,595.95. In satisfaction of the purchase consideration the Commission assumed the Tollowing outstanding debentures standing against the properties:

all out standing debentures issued under Municipal Dy-laws	
By-Law Number 1581-597, due 1936 By-Law Number 480 due 1945 One third of the liability in respect	936,532.16 7,693.15
of outstanding debentures issued under By-Law number 609 due 1989	4.570.52
Total -	\$50,895.93

The annual payments required in connection with interest and principal for the above debestures are:-

By-Law Number 381-397 principal and	\$2,927.31	
interest ។ (២០ មុខ ឆាប់ , ១៣៩, ១៤៩ មក ខេស ១២៤		
By-Law Number 309 sinking fund and		
interest - \$1.017.45 one-third of which is payable by the Coumission	359.15	P.V.
By-Law Eumber 480 - sinking fund and interest	582.64	No no
a with done numerical lass and which at one numerical part and all all the file.	43,849.10	

The amounts included in the above as representing sinking fund payments are being met out of advances to the Commission by the Province while the interest is charged to

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OR ORGANIS LIGHT THE THREE IS NOT THE PARTY OF THE PARTY beredevic Chico Company Living to proof a particular only to much said the property leading property about a property and the later has been property and the later h descriptions of the state of the same of t THE RESIDENCE OF THE PARTY AND A PARTICLE OF THE PROPERTY AND THE paleticar one western brailing the Foundation or seems one residence IN A Chapter with Sections Deliver in State of S

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The Engineers of the Commission, in a report dated June 26th, 1915, gave the results of a valuation of all of the properties included in the Gravenhurst Power System. The following excerpt shows these properties divided into four main groups for which the replacement value and the present value had been estimated. The first of these items only, namely, the generating plant, was purchased by the Commission.

Itoms		Dela	Replacement	de been with order to substitute on a substitute of	220 50 15 15 15 15 15 15 15 15 15 15 15 15 15	
Generation Transmission Transformation Distribution			\$52,168 10,120 13,050 15,366		\$35,386 4,048 10,362 8,784	WJP.
* 0	tal	8	\$90.694		\$62,530	

in this report it was suggested that the sum of \$45.388.61 be paid to the municipality of Graveshurst for the purchase of the generating plant which, it was estimated, had a value at that time of \$39,386, and would cost \$52.158 to replace. The actual price paid, however, was \$50.596. A revaluation of the properties was again made, following the purchase of the development, and an amount of \$33,250 was put down as tangible values, the difference of \$17.366 being war, and in the books of the Commission as intangibles.

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1914,200	3+ 5 - TN	~ 1 J	T 3

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Since the acquisition of the above named proplantal report and which of the perty, the Commission has expended \$161,935.05 in extending the plant, lines and other equipment of the system, which makes a total investment of \$212,530.96 at October 31st, 1921. The principal items going to make up the expenditure of \$161,935.03 are as follows:-

P.W. p. 6.

Power Development -South Falls Generating Statton, etc. \$43,488.95 Mydraulic Construction, etc.

54.235.79

Wood Pole Lines -

AS THERE THE DOLD LAND

Transmission line from South Falls generating station to the Town of Muntaville 1.613.37 Miscellancans

52.700.07 84,313.44

Distributing Statton at Huntsville -

Building to ame to sto don't frue ton de 1.500.55 Blectrical and other equipment

8,396.32

Total expended for extensions and improvements since October 1918

\$161.935.03

The investment of \$212,530.98 in this system at October 31st, 1921, may be classified as follows:

> Power Development \$146,521 Transmission Lines 54,313 Transforming & Distributing Station 9.897 WHILL BY PART TON SHOULD BE READING AND

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place has supplied by the many proof per person the Constraint has equented Visionian to out with gradianous all un aum of the B W W T Della · Silvery Description sate and their performed artes about TV-TRA-NAME AV. SET. THE COLUMN TWO IS NOT and the second s - agail alog book the state of anti-selection BUT BUT BY BELIEVED AFTER APPEARING CTAPOT . IS ad Hamistania La - although a self-tolly attracted Acceptors with the Lastetrath and the province of the second THE RESERVE MISS SPECIAL MARK MESSESSESSES mercy and of My. Objection to Schoolsaval and FIRST DELIVER NEWSCO DINGS WALKSTONAUND v154 AND IC A SENTENCE MARKET - Charle ARREST CARE

The following table shows the capital costs per rated horse-power developed for each of the years from 1916 to 1921:

WJF. p. 29

	1916	Fisonl 1	7ears end	ling 0056 1919	ber 51st	1921
Power Development	\$164.10	\$99.50	\$105.00	200	\$115.60	M.
Fransmission Lines Transforming & Dis-	109.50	42.40	42.40	42,40	48.40	42.40
tributing stations	18,60	6.98	7.82	e-veligible rights to the second of the	ergiller - eruss-middle - middle - erdiller - erdiller - erdi	gantinatus e esperantatus e manero mesperia misprazionistiki misprazionistiki misprazionistiki misprazionistik
Totals	\$292.20	\$148.86	\$154.92	\$158.73	\$168.85	\$166.14

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capital costs per lated plant horse-power developed was high in 1916, This is due to the fact that the repairs and additions to the South Falls plant were made during this year, and the expenditures therefor were included, while no additional power had yet been made available.

In respect of the capital costs of the horse-power of the Muskoke System, our Consulting Engineer states:

"The capital costs of the Euskoka System contain an item of about \$17,400, representing the value of intengibles taken over with the South Falls plant. The capital cost of the South Falls generating station show reasonable construction costs and now stand at about \$116.00 per horse-power."

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Reserve for Renewals

The balance in the reserve for renewals at October 31st. 1921, amounted to \$25,471.39.

tions in 1915 to October 31 st. 1920, the additions to the reserve for renewals, in respect of the properties of the Muchoka System, were provided through inclusion in the cost of power to the municipalities of an annual charge of 35% on the capital invested in the works, lines, etc., together with interest at 45 per annum on the balance in the reserve account.

P.W.

upon the advice of its engineers, the Commission reduced
the annual rate of renewal from 3% to 2% on the capital
investment, while the interest rate of 4% remained unchanged.
The accounts of the Commission were so adjusted that the rate
of 2% was made effective from the inception of the system
to October 31st, 1921, and the cost of power to the municipalities was correspondingly reduced.

a summery of the reserve account, with a balance of \$25.471.59, as constituted at October 31st, 1921, upon the 216 basis is as follows:

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Particulars	Annual Aggrusk	Interest	Conether)
Fiscal year ending October 51st				
1917 1918 1919 1920 1921	\$4.184.53 4.956.75 5,078.29 5,308.63 5.313.27	\$167.57 572.44 590.59	\$4,184.83 5,124.10 5,450.73 5,899.22 6,135,76	
Together	\$24,841.25	\$1,952.91	\$26,794.16	\$
Deduot				
erator and representation of report	ing 450 K.W. gen airs thereto and	\$1,160.12		P.W.

Interest applicable

to above charges 142.65 1.322.77

Balance as at October Slat, 1921 \$25,471.89

STATE AND ADDRESS THE RESIDENCE OF

\$1,180.13

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The annual rate of 23% was determined by a re-Deliver to send in the classification of the properties made by the Engineering Department of the Commission and reflected in the book accounts as at October Slat, 1920. The actual rate arrived at was 2.42 % and the rate of 2.5% of the capital investment was, therefore, adopted as a matter of convenience. The bidding of the course of the planting ages, o In arriving at the above mentioned rate, clerical errors SPECIAL CLASS, NACT & RESEARCH TO in the computation were made by the Engineering Department HER SHARED STATE SECURITION AND VALUE AT FRANCE so that on the basis used the rate should have been 1.694% and other dealing Suppose Many, 2003. The manufacture of Students

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60	98.9816 20.888 69.088	0,078.29	1917 2017 1920 1920
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instead of 2.424%, a difference of .73%. As a result of this discrepancy, we understand the Commission has now considered it advisable to make a further reduction in P.W. p.11 the annual renewal rate of 2.5% which was used as mentioned & 12. above.

In respect of the adequacy of the renewal resorve, our Consulting Engineer states as follows:-

now he are promised from its properties on the health our-

"It is understood that it is the practice of the -Hydro-Electric Power Commission to spend sufficient money on maintenance account each year so as to keep each and every portion of the system in a condition to operate in accordance with the reoutrements of economical production which it is stated is considered to be about 75 per cent. as good as its onighal now condition. This being so, it was done dered in this report that the renewal account should be studied in connection with and applied to the renewal of only 25 per cent. of the capital concerned."

WJW. p.41

"At the present time the total depreciable capital is probably about \$151,000, while the reserve for renewals to the end of 1921 was about \$25.471. and should be about \$31,500 at the end of 1922, assuming that the 2.5 per cent. rate was applied. As a large portion of the total deprociable capital has been invested within the past few years, and as the useful life of each portion of the equipment is really in the early stages, it would therefore appear that the present total accumulations of the fund as applicable to 25 per cent. of the total depreciable capital is comowhat larger than is necessary, taking all the above WJF. factors into consideration." Streng recently for this arrive is murlow compile

p.42.

Recerve for Sinking Fund

The balance in the reserve for sinking fund at Ostober 31st, 1921, amounted to 3750.60 which represented the charge made against the town of Gravenhurst for the fis- P.W. p.12 cal year ending October 31st, 1921. The reserve for sinking

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fund of the Muskoke System is provided on the basis outlined under the Power Commission Act, vis: an amount sufficleat to accumulate in thirty years a sum which will repay
the investment in the system with a five-year deforment
period. As is permitted under the Power Commission Act,
the collection of sinking fund for the two municipalities
in this system was deferred. Buring the fiscal year ending
October Sist, 1921, the municipality of Gravenhurst has been
operating for six years. Therefore, there was included in
the cost of power for the year ending October Sist, 1921, as
amount of \$750.60 for sinking fund based on the rate of 1.8%
of the capital employed, applicable to that municipality.
As Muntsville has not been operating for six years no provision for sinking fund has been made.

P.W. p.12.

Reserve for Contingencies

The balance in the reserve for contingencies at October 31st, 1921, amounted to \$1.911.14.

P.W.

by the Commission for the purpose of providing for special losses or expenses nor arising at regular intervals and not wholly applicable to the ported in which incurred. The contingency reserve for this system is provided through a charge of 25¢ per horse-power included in the costs of power supplied each year to the municipalities and others, together with the interest at 4 per cent. per annum on the balance in the reserve account at the beginning of the year.

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In respect of the adequacy of this reserve, our Consulting Engineer states as follows:

"Considering the heavy lesses which might be occasioned through catastrophe or other contingencies, it is considered that the total amount at the credit of this fund, namely \$1,911, abould be augmented by increasing the annual allowance for contingencies, and when a reserve of say \$5,000 or \$10,000 will have been built up, the rates can be readjusted to suit the conditions found after several further years of experience."

WJP. D.44.

accounts with Municipalities.

Accounts with municipalities are divided by the Commission in the main as fellows:-

- (a) Power accounts Receivable
- (b) Bue to or by municipalities in respect
 of the cost of power furnished them
 as determined under the Power Commission
 Act.

(a) Power Accounts Receivable

The balance of power accounts receivable at October 31st, 1921, amounted to \$10,735.51. As at September 20th, 1922, the date on which these accounts were examined by our Auditor, they had all been paid.

(b) Dre to or by Municipalities

power bills rendered monthly are adjusted to meet the operating cost of the system, as provided by the Power Commission Act.

It does not appear to be the practice of the municipalities to pay in each these additional charges,

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but instead the Commission increases the interim rates in subsequent periods and thereby reduces the accumulated deficits of prior periods.

Section 23a of the Power Commission Act provides

The Commission may from time to time during the first three years after any municipality shall first begin to take power from the Commission extend the time for payment of the sums payable by any municipality."

The following balance with the municipality of Gravenhurst extends beek to the first year of operation, and beyond the three year limit as authorized by the Act, and it was, therefore it declar in the payment of its power bill. The amounts owing to or by the demnission at October 31st, 1921, are as follows:

Due by Gravenhur st

\$6,272.07

Due to Huntsville

1,290.35

Results of Operation

Riscord Library

Power is supplied to the municipalities on the Muskoka System on a cost basis as outlined in the Power Commission Act. The cost of such power includes:

- 1. Operating and maintenance expenses.
- 2. Interest on the monies invested in the
- 3. Provision for the renewal of the works.

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Sinking fund on a thirty-year basis to ropey the investment in the system.

The operating account of the system for the

form years and inc hotobor Slat. 1921, is as follows:

322.48

Particulars	Fiscal 1918	l year endl:	g October 3	31st. 1921
Rovenue				
From sundry customers	\$21,758.00 56.55	\$25,035.85 56.05	,	
Total	\$21,815.35	\$28,091.88	\$25,114.63	\$27,172.94
Operating Expenses	γ			
Operating Expenses	\$4,312.38	\$5,104.71	\$5,373.65	\$5,521.73
Maintenance Exponses	2,160.00	3,061.28	1,696.02	2,752.0
Overhead Expenses	2,169.89	2,711.79	2,705.47	2.032.3
Interest	7,930.95	8.802.67	9,661.89	9,670.1
Provision for Renewals	4,956.73	5,078.29	5,308.63	5,315.2
Provision for Sinking				750.6
Fund Provision for Contin-	50 ID 921	5 0 1 10 T 1 T 10 T	The Book From Some	ACCE TOUR
gengies	247.23	296.47	337.50	501.8
2000100	and the second s	and the second s	repair-busings the processing was a series of the contract of	
20642	\$21,777.15	\$25,055.11	\$25,088.86	\$27,141.9
Dalance transferred to contingencies repre-				24
power sold to sundry oustomers	\$58.20	\$36.77	\$31.27	\$50.9

Cost per horse-power billed \$22.22 \$21.13 \$18.58

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The following table, giving the detailed cost per horse-power billed, shows in what respects and to what extents the costs have varied:

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Particulars	71sca. 1918	l year end 1919	7957	731 85 , 1921
Operating Saintenance Overhead & Ceneral Expenses Interest Senswals Sinking Fund Centingencies	\$4.40 2.20 2.21 8.09 8.07	84.30 2.58 2.29 7.42 4.29	\$3.98 1.26 2.00 7.16 5.93	\$4.58 2.28 2.35 8.02 4.38 .62
	\$22.22	\$21.13	018.50	\$22.48

under the rate of July 27th, 1915, the Commission submitted an estimate to the municipality of Gravenhurst to supply 300 horse-power at \$15.51 per horse-power.

the actual loads taken by Gravenhurst and the actual cost per horse-power for the years 1918 to 1921 inclusive are P.W. as follows:

					Actual Load	Cost per h.p.
Your Your	ending ending	October October October	31, 31,	1919	312.6 359.3 478.4 368.2	\$17.18 17.09 14.43 19.10
	Average		-	379.6		

from the above it will be noted that the actual load exceeded the estimated load by 79.6 horse-power or 26.5% and at the same time the actual cost exceeded the estimated cost by 8%.

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The Commission submitted the following estimates to the municipality of Huntsville in respect of supplying power to it. Other estimates were submitted covering a supply of power from the High Falls plant, but inasmuch as the power has been supplied from the South Falls plant, they have been emitted from this report. The estimates are as follows:

				on basis of contract for 15 yrs. 20 yrs.			
Por	700	horse-power	т ¹ 6 к ирта	\$29.55 25.92		\$20.62 25.02	P.W. Rx.1.

The contract finally made by the Commission and Buntsville ocvered a period of sixteen years.

The actual loads taken by Huntsville and the cost thereof per horse-power for the years 1918 to 1921 are as follows:

					Actual Loss	Actual Cost per here
Year Year	ending	October October October	51.	1919	667.3 826.6 871.6 859.0	\$24.32 22.85 20.84 23.94
	Average	Load		801.3	003.0	A 4 4 4 4

average load has slightly exceeded the estimated load of 800 herse-power, while the cost is considerably less than the estimated cost for a corresponding amount of herse-power.

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POUR DATA

Population Served

only, there being no rural lines built to October 31st, 1922.

The whole of the lead is carried by the municipalities of Gravenhurst and Huntsville, which in turn sell large blocks of power under contract to the National Potash Corporation in Gravenhurst and the Anglo-Canadian Leather Company in Huntsville. During the summer season some electricity is sold to sundry customers at Euskoka Palls.

for 1921 gives a total population of about 21,000, all-year residents, for those portions of the Counties of Huskoka. Parry Sound and Haliburton, which might be tributary to the Muskoka System. At October 51st, 1921, the total population in the two municipalities served by the system was about 5,600 persons, with about 814 consumers. As Bracebridge with about 2,400 population is the only other town of any size tributary to the Muskoka System and is already supplied with electricity by its own plants, the greater part of the remaining 15,000 population could only be supplied by a fairly extensive system of rural lines. The two municipalities now served were billed with about 1,307 horse-power in the fiscal year 1921, and about 1,344 horse-power in 1922, thus showing an increase of about 137 horse-power in the demands

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of Gravenhurst and Huntsville. The indications are that the municipality of Bracebridge will require a fairly large amount in the near future to meet the industrial growth and municipal requirements, their present demand having already outgrown the capacity of their hydro-electric plants.

of consumers at the end of the fiscal year 1921, in the places served by the Commission, the approximate horse-power billed to each place in 1921, the total kilowatt-hours consumed on the system in 1921, together with the average herse-power and average kilowatt-hour per consumer. The figures are useful for compeniate with other systems although they should be used with contion.

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Municipality	Popu- lation	Consu- mers	Porcent- age Con- sumers to Popu- lation	н. Р.	m vi	Billed H.P. or con-	Kilo- watt Hours per Consumer
Gravenhurst Huntsville	1,452	381 434	26.6	568.2 839.0	400	0.97	494
Potals	3,608	015	22.6	1,207.2	4,605,72	5 1.48	5,680

The average horse-power billed per consumer and per capita, and the average kilowatt-hours per consumer and per capita for the fiscal year 1921 are as follows:

Average Herse-Power billed per consumer 1.48
Average Herse-power billed per capita 0.33
Average Kilowatt-hours billed per consumer 5,650
Average Kilowatt-hours billed per capita 1,276

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Growth of Market and Ultimate Sources of Power Supply

Since the commencement of operations of the Muskoka System in November 1915, the growth has been steady except for a decrease of about 150 horse-power during 1921 due to an industrial slump at Huntsville. The table given below shows the loads for the system, the figures being sives in horse-power:

	1916	Piscal 1917	Years 1918	anding 1919	October 1920	51st 1981	1922
Gravenhur st Hunt sville Potals	235x	321.7x	312.6	359.3	872.6	639.0	362.7
	(61.57)	B .V	979.9	1,185.9	1,350.0	1,207.2	1,345.9
		x - Jowe	r take	a during	gotober	White-	

It will be seen from the table above that the load for Huntsville during 1922 has increased by about 140 horsepower over that of 1921, thus showing that industrial conditions are approaching normal and that the system has regained its usual growth. These figures do not show the actual peaks on the system, but they do indicate the growth of the domand.

The problem of serving rural customers is difficult. the average number of consumers per mile being small, and the experience of the Commission is that only three or four per mile are obtainable.

The situation at the present time is that there is a shortage of power at South Falls and at the Brasebridge plants.

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Indications are that the municipality of Bracebridge will soon become a partner in the Euskoka System, and will either operate their plants in parallel with the South Falla generating station or will receive an additional supply of power from the transmission system.

OF the Lawrence business of It is estimated by the engineers of the Commission that the 4,000 horse-power still said to be available at the South Falls plant when the necessary generating equipment will have been installed, will be taken up by 1928. It will then be necessary to look to the High Falls site on the North Branch of the Muskoka River or to the other sites mentioned above, or to some source outside of the district of the Buskoke System. Except for the South Falls site, most of the individual sites in the district are comparatively small, but the aggregate capacity might be from 12,000 to 15,000 horsepower exclusive of jouth Falls, provided that all the sites prove to be commercially feasible for development. The value of the sites on the lower Muskoka River and on the Moon River would depend in large measure on the degree of practicable regulation of Lake Muskeka, which is doubtful.

This brings up the question of the ultimate use of power in the district and the future source of power supply. If Misgara power be used it would necessitate the building northwards of a number of tie lines extended from the Misgara System to the Wasdell's and Severn Systems and from there to the Muskoka System, and adapted for the Muskoka System by means

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the transfers desired and energied for the firsteen spring by minute

of frequency-changers, since Hisgars power is developed at 25 cycles and the other systems use 60 cycles.

To use power from the French River for the Muskoka System and for the Combined Northern Systems, and possibly for the Minissing Section and for the northerly portion of the Trent Section of the Central Ontario System. long transmission lines from the French River to Nipissing, and from Hiplosing to Muskoka, and from Muskoka to Wasdell's and to the Trent systems would be required. As all of these systems are operated at 60 cycles, the use of French River power, which is contemplated at 60 cycles, would avoid the use of irequency-changing apparatus. The development of the French River sites would depend on the growth of the load on the Combined Northern Systems, and in the North Bay-to-Budbury district, to a sufficient degree to permit of their economical use. If the general power demand continues to increase at a rapid rate, the total economical capacity of the French River sites, which is probably about 20,000 horse-power, might be reached within a comparatively few years, in which case Hiagara nower would be the only feasible source of supply. From an operating point of view it would be preferable to use power generated at 60 cycles and avoid the complication of frequencychangers. It is understood that the Commission contemplates the use of some Niagara power through frequency-changers in the mear future, for the Eugenia System.

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NOT THE HAVE BUILDING HER BUYER BOOK BOOK AND REthe province previous and their site was one exercit and their remaining for the diploster desirable metallic metallication payers of the Trans. On the Saltan Course to the Courses LEAST PERSONALIZATION PLANT OF THE PROPERTY AND AND ADDRESS OF THE PARTY OF THE PAR and four light along to Decrease and from Decrease in Bushaling and if the freal Systems would be required. As all of those Systems as a substant of the feature on Altro Eleme secitio Item Advantamentada et della especi and the second that are the second of the se as head of the frame will be breezed alrew works on the Assess purchase terminal free and the single of the Indicate the state of the state at the shaperent at about poor between we way to wreat but his Geral Capest and to religious Labinsons Caron and annot been block atter, water to prompty series and series where an entire and to reagant ware detain of assure out give the annual and rive player THE REST OF THE PERSON OF THE PERSON STATES AND THE PERSON STATES more and as alternature of Steep at wall In spice walkerings -company to adjauligns and blave and solen 85 to deferming a miniculation on finituons and your bookerstan at it the two of east History payer through the quetep-energers in the enterett meneger fits tot entere total NCLOSURE TO

If power be transmitted from either of these sources, a system of billing for each of the four or five systems affected would have to be developed so as to fairly apportion the coats of the transmitted power.

NSF. p.19, 20,21,

Hor se-power pereloped, Etc.

on page 26 of our Consulting Engineer's report to shown a table of horse-power developed, consumed, billed, etc., for the years 1916 to 1922 inclusive.

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Power Situation

the two municipalitic Perved in the district. The density indicates a high percentage of consumers per capita of population. The demand for electricity is apparently still growing and indications are that further sources of power supply must be provided in the immediate future. The ultimate demand for power and the ultimate sources of supply should be considered in the near future.

The REAL DESCRIPTION OF THE PERSON PROJECT IN THE

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GREERAL RELATIONS

THE R. LEWIS CO., LANSING, MICHIGAN P. LANSING, SPINSTER, SPINSTER

Relations between the Gravenhurst

Electric Light and Water Commission
and the Hydro-Electric Power Commission

On February 21st, 1919, Hr. Butterworth of the Gravenhurst Commission wrote the Hydro-Electric Power Commission in part as follows:-

"When we entered late the contract with the H.R.P.C., it was with the understanding that the rate was to be \$10.00 per horse-power par year, but before submitting the by-law, acting on the recommendation of Sir Adam Book, that clause was changed and we accepted the standard contract, because Sir Adam hold out the expectation that the rate would be lower.

However at the end of the first year the rate was increased to \$12.56, the reason assigned being that we had not taken the amount of power agreed vis: 500 horse-power. Our average for the last year is well ever 500 horse-power, and our Commission feel that they are now entitled to the \$10.00 rate, although we notice that the power bill just paid is still being billed at the \$12.56 rate. Will you please take this matter up and advise us why we are not receiving the power at the lower figure."

The Chief Engineer of the Commission replied a few days later pointing out that power is delivered to all municipalities at cost and that a report on cost of operation of the Euskoka System would be submitted.

The matter of the cost of power appears to have been a subject for dispute between the Gravenhurst Commission and the Hydro-Ricotric Power Commission. At the hearing on "General Relations" on April 25th, 1925, Mr. Butterworth in

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evidence made the following statements:

"The original proposal was power at \$10.00 per horseppower, and we were told that if Hydro took it over we should probably get it at \$3.00, certainly less than \$10.00, but we are now paying \$20.00."

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"We find quite a difficulty in getting men who are willing to sit on the Commission; they take the view that the Hydro control it to such an extent that they might as well stay at home and let Hydro control the whole thing. We have no power to fix the rate that shall be charged and we have no voice in determining what expenditure shall be incurred and we have simply to take our instructions from the Hydro Commission."

EV.

Then we have Bracobridge, they can generate power and sell it to their manufacturers at \$12.66 a horse-power. I was talking to their mayor a few weeks ago. They are not on the myore and they tell you you could not chase them on the myore, elthough they would like to have more power. They are operating their plant at \$12.66 a horse-power. The mayor was for a long time on the Commission and he claims they are absolutely sound."

Ev.

Hr. Eucas and Mr. Jeffrey, who were present representing the Commission at the hearing at which this evidence was given, questioned the witness on other matters, but did not contradict the statements quoted.

the above extracts from correspondence and evidence do not agree with the information submitted by our Accountants who show in their report that the estimate submitted by the Commission to the town of Gravenhurst on July 27th. 1915, was in the amount of \$15.51 based on a load of 300 horse-power.

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tion with the system it is not possible to explain the difference between the evidence and our Accountants' findings. The state of the Transport of the difference between the evidence and our Accountants'

Letter from Mr. Ditchburn of the Ditchburn Pleasure Boats, Limitod, to Mr. McCollum of the Hydro-Electric Power Commission

In the files of the Commission, the following letter appears under date of December 51st, 1920:

"Please accept thanks for charts you sent regarding the load extrict at the pumping station. Mr. Butterworth advises me that he has returned these to you several days ago and trust they reached you.

the western or the lower which will

I am not on the Commission any longer so will not have the pleasure of doing business with you any further in connection with Mydro power. I am still, however, very much interested in the welfare of pur town, as every good officen should be, and I implore your best efforts to keep us in as favourable a condition with respect to electrical energy as you can. Reviewing the whole situation, it seems very unfortunate that we should ever have gotten into this Hydro business, if there was any way to avoid it, and I certainly think that, with all due respect to the Hydre Commission, there is a tremendous lot of room for improvement in both the Act and the carrying out of same, and particularly with respect to the engineering Department. As the writer recent-ly saw stated in the Mail and Empire, it is an Act in the first place, which isn't founded on the principles of Democracy and British Justice, and this alone will eventually, as soon as the people realise it, make it unpopular, and either cause its downfall or a sweeping revision of the Act. It is nothing more than an autocratic institution licensed by a Democratic Government, as no doubt you can see for yourself, whoever heard in the ordinary course of business of a contract being entered into between two parties, in which one of the parties was given

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des 1474 de verma que mel adureb ante se don ma l have the gleaver of allo healess with you ared still to ma I washing outpit date and sales at the officer however, very mode interpreted the walker any property stright I had you blook meabile been given as agent goes been effected to be good to be forthered to and he haved feel straigs at decrees of the matricions The area of the contract of th COLD DESTRUCTION OF THE STREET, STREET BUT DESCRIPTION LAND Alley at you to low ocally if paredians owing plant increased and the distr whele their winderson I have all A T TO SUCCESS A STATE OF THE OWNER AND ASSESSMENT OF THE OWNER OF THE OWNER O of room for imprevening in both the Art and the the terminal of the last flow in a great his gar against the "TANDES THE THE SALE SALE ACCOUNTS NOT DESCRIPTION OF SEC. the ser states to the field was series one of -wise say on Asheny First data's assain as in the and he ampled a highligh and compression against sings will aventably, as sees as the propie richins Almost as were recite bus pallegoes at any of paldion of all orea out to meleiver garages at the ward them in enterredte less builtes limited by a bett nes ann pay fama en ala generarant affurnamen to cause yourship and as broad neventr ever a SERVING BE & DERICHSE Select distance Links between derig are colleged the and de sea dable at contrate and

the right to settle all disputes. This to my mind is in itself ridiculous and obviates the necessity for any contract at all.

All said and done: the following glaring facts remain, namely, that the town of Gravenhurst at one time owned and operated an electric generating station which was very economically installed and operated, so much so that bosides being ablo to offer special inducements for manufacturers to come here, we were still able to produce a revenue that helped to reduce our tax rate and altogether we seemed to be in a very advantageous position. Then along came the officers of the Hydro Electric and statements were made to the effect that our condition would be very such improved by going in with the Hydro and quite naturally we believed these statements, with the result that now wo find outselves paying higher than ever for power, with no special indusoment to offer, and with an accumulating debt, ever which have no control, without saying anything on the fact that the Hydro did not allow us what it cost to build the plant in the first place. As part of this original cost was the good will of a private concern that we had to purchase before we could start. This was thought an injustice at the time, but in the expectations of getting, as promised, a cheaper power, it was let slide.

We are situated between two non-Hydro towns, namely Bracebridge and Orillia, both of which have power to offer at less than we can ever hope to and yet the Commission, although they have the power to set the rate in these towns, allow us to remain at this tremendous disadvantage.

We really believe that a nicely written review of the whole transaction between the Hydro and the town backed up with correspondence and unsigned contract, etc., that we have on file would prove ac conclusively as to misstatements and inefficiency and miscalculations of the Hydro management as to interfere very severely in inducing other municipalities to take on Hydro, and for this reason alone, your dommission might do something for us to right the injustice and improve the feeling that exists in general in this section of the country with respect to Hydro development."

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Contract between the Commission and the Town of Muntsville

The contract between the Commission and the municipality of Huntsville provides, among other things, that the
municipality shall pay as a part of the cost of power "an
annual sinking fund instalment of such amount as to form at
the end of 16 years, with accrued interest, a sinking fund
sufficient to repay the Corporation's proportionate part,

. . . of all moneys advanced by the Province of Ontario
for the acquiring of the proporties and rights, and acquiring and construction of proporties and rights, and acquirstations, transmission lines, distributing stations and
other works necessary for the delivery of electrical energy
or power, delivered to the Corporation under the terms of
this contract".

it is to be noted that the sinking fund standing deferred against the municipality of Huntsville as at October 51st.

1921, has been provided on a thirty-year basis instead of a sixteen-year basis as required under the provisions of the contract.

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THE R. P. LEWIS CO., LANSING, MICH.

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In the foregoing sections of this report

comment has been introduced from time to time to make the

various statements clear. No public hearing was held in

reference to matters connected with this system, in con
sequence of which the report is based entirely upon facts

and figures supplied in the official reports of the Account
ants, Messrs. Price, Unterhouse & Company, and the Consult
ing Engineer, Mr. Walter J. Francis.

In order to the continuous to the matters on which the Commission may desire to give particular attention hereunder is given a brief summary of the points which appear to require special consideration.

Commission purchased Generating Plant ("Historical" - p.3)

MANAGEMENT, STREET, STREET, STREET, STREET, STREET, STREET,

opment plant at South Falls on the South Branch of the Euskoka River from the municipality of Gravenhurst. The Engineers of the Commission valued the plant at \$39,386 with a replacement value of \$52,156, and suggested that the price paid be \$43,388.61. The price actually paid by the Commission was \$50,596, which amount was distributed in the books of the Commission as a tangible value of \$33,230 and an intangible value of \$17,366.

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Capital Investment ("General Becommics" - p.16)

they have expended on power development, wood pole lines and distributing stations the sum of \$161,955.05. The total investment as at October Slat, 1921, was \$212,530.96 of which amount \$17,400 is carried on the books of the Commission, representing the value of intangibles taken over with the South Falls plant.

Capital Cost per Horse-Power ("General Economics" - p.17)

The Commission have succeeded in reducing the capital cost per retel have pewer since the purchase of the plant. In 1916 the cost of power development was \$164.10 per horse-power and in 1921 this had been reduced to \$116 per horse-power. The total cost per rated horse-power including power development, transmission lines, transforming and distributing stations has been reduced from \$292.20 per horse-power in 1916 to \$166.14 in 1921.

Reserve for Benewale ("General Roonemica" - p.18)

Our Consulting Engineer reports that the renewal reserve is somewhat larger than is necessary, taking all factors into consideration.

Reserve for Sinking Fund ("General Economics" - p.21)

Reserve for sinking fund has been provided for in the cost of power in accordance with the Power Commission Let

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to form in thirty years with interest at 4% the amount of capital invosted.

Reserve for Contingencies ("General Rechamies" - p.21)

The amount to the credit of this account as at DESCRIPTION OF THE PARTY OF THE PERSON OF THE PARTY OF TH October Slat. 1921, was \$1,911.14. Our Consulting Engineer THE RESIDENCE LABOUR DISCOUNT considers this amount inadequate and states that it should NAME AND ADDRESS OF THE OWNER, ADDRESS OF TAXABLE be augmented by increasing the annual allowance for contingencies until an amount of \$5,000 or \$10,000 has been built up, the rates to be then adjusted to suit conditions found In the own of the interpolity or best of fire, an after several further years of experience.

Accounts with Eunicipal Rida ("General Economics" - p.22)

The balance in the power accounts receivable at October 31st. 1921. amounted to 810.735.51. These accounts were examined as at September 20th, 1922, and it was found DATE AND THE REAL PROPERTY AND THE SALES AND that they had all been paid by that time. As at Cotober 31st, people o'miliable) make also below served provinces on the contract of the co 1921, there was a debit balance against the system of BY MADE TO PROPER YORKS THE CONSISSANCE HE WITH THE PROPERTY AND AD-\$4,981.72 made up of a debit balance against Gravenhurst of purple the functioning of imposed or finan-\$6,272.07 and a credit balance to Huntsville of \$1,290.35. SPECIAL OF THE OWNERS AND AND THE PARTY AND PERSONS ASSESSED. The debit balance against Gravenhurst extended back to the SARTH THE CHIEF OF PERSON IN ADDRESS OF THE PERSON IN THE PERSON IN THE PERSON IN first year of operation and beyond the three-year limit as THE AR PROPERTY AND ADDRESS OF THE PARTY ADDRESS OF THE PARTY AND ADDRESS OF THE PARTY ADDRESS OF authorized by the Act, and this municipality was therefore propertyl as the works, may an evalue in abstract to one our in default in the payment of its power bill.

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Estimated Power Loads as Compared with
Actual Power Loads and Estimated
Costs compared with Actual Costs. ("General Economics" p.25)

comparing the estimates submitted by the Commission on July 27th, 1915, to the Municipality of Gravenhurst, it is found that the actual load exceeded the estimated load by 26.5%. Brem with the actual load exceeding the estimated load, the actual cost of power to the municipality exceeded the estimated cost by \$5. (Before giving effect to the reduction in the renewal reserves referred to in the "Addenda")

In the case of the Bunicipality of Buntsville, an analysis of the estimates shows that the actual average load has slightly exceeded he estimated load and that actual cost is somewhat less than the estimated cost.

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Future Sources of Power ("General Recommics" - p.31)

power available in the district, careful investigation should
be made before money is expended on this development to ascertain the feasibility of introducing Siagara power into this
system or the practicability of bringing power from any developments that might be made in the future in the French River District.

From an operating point of view it would be preferable to use power
generated at 60 cycles, such as would be obtainable from the
development of cites within the immediate district or from the
French River District, but since it is understood that the Commission contemplates the use of some Siagara power through
frequency changers for the Eugenia System, it might be more

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power available in the district, usingly developed and the straightful to the section of the straightful to the straightful to the section of the straightful to the section of the straightful that the straightful that the section of the straightful that the section of the straightful that the straightful that the section of the straightful that the straightf

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economical to extend the use of this power to the asdell's. Severa and Muskoka Systems.

Relations with Municipalities of Gravenhurst and Huntsville ("Constal Relations" - p. 53)

Butterworth of the Gravenhurst Commission complains that they have been misled by the Commission as to the cost of power.

Hr. Butterworth voiced these complaints before the Inquiry Commission in the presence of officials of the Commission.

and they were not replied to. In reply to a letter from Mr. Butterworth to the Commission on this matter, the Chief Engineer of the Commission on this matter, the Chief Engineer of the Commission on this matter, the Chief Engineer of the Commission on this matter, the Chief Engineer of the Commission on this matter, the Chief Engineer of the Commission on this matter, the Chief Engineer of the Commission on this matter, the Chief Engineer of the Commission on this matter, the Chief Engineer of the Commission on this matter, as been delivered to the municipality at cost on the basis of the contract in force and made no reference to the statements alleged to have been made by Sir Adam Book that the rate to Gravenhurst was to be \$10.00 per horse-power per year, and that this rate might be reduced.

as pointed out sinking fund is being provided in accordance with the terms of the Power Commission Act. Insofar as the Municipality of Huntsville is concerned, however, the contract in force with the Commission is for a term of only sixteen years. This contract provides that the municipality shall pay as a part of the cost of power "an annual sinking fund instalment of such amount as to form at the end of sixteen years with accrued interest, a sinking fund sufficient to repay the corporation's preportionate part . . . of all moneys advanced by the Province of Ontario . . " Thus it will be

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provisions of the Power Commission is following the provisions of the Power Commission Let in respect of sinking fund, it is not following the terms of its contract with the Municipality of Muntsville. Unless the Commission is successful in having its contract with Muntsville renewed at the expiration of the sixteen-year period, Muntsville will have contributed only sixteen payments to the sinking fund reserve, and the question arises as to what to have on the Commission have for collecting the balance then due on the expiration of the contract.

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It has recently been brought to our attention that the Commission has made substantial reductions in the renoval rates charged in various systems, and that such reductions have been made retroactive to the date of first operation.

Memorandum re Reduction of Asnewal Bates on the Euskoka System

On December 20th, 1922, the Commission passed the following minute reducing the renewal rates on the Buskeka dystem:

"The Chief Engineer having recommended a revised depreciation rate calculated on the basis of the life of the equipment, also having advised that this matter had been taken up with Mr. Francis and approved, it was decided that the depreciation rate for the Muskoka dystem should be fixed at 1.25 per cent., and that this rate be made retroactive to the date of first operation."

The rate used by the Commission was 2.5 per cent.

and this revision has resulted in a reduction of the rate of

1.25 per cent.

of Hydro accounts in the absence of Mr. Pierden, that the effect of this revision has resulted in a reduction of the renewal reverse at October Slat. 1921, of approximately \$13.936, with interest accretions of the fiscal year ending

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depreciation rate calculated on the best of the life of the equipment, also having advised that the rate of the fact the fine beauty and that this rate be made retromable to the test of the test of the test of the test of the section.

THE PART NAME OF THE PARTIES OF THE

 october 31st, 1922, of which \$13,920 has been applied as a credit to the municipalities as a reduction in the cost of power, and \$15 as an addition to the contingency reserve. The amount of \$13,920 credited to the municipalities has the effect of reducing the cost of power to them during the entire period of operation to October 31st, 1921, and would have the effect of reducing the balances owing by them at October 31st, 1921, or increasing the balances due by the Commission to them.

It is to be noted that this reduction will reduce the actual cost per power below the estimated cost.

The operating figures in the report are also subject to revision, especially the annual cost per horse-power.

In view of the instructions given, no attempt has been made to recast the figures in order that they may conform with the changes made, but it is pointed out that in reporting to the Government some reference should be made to the reduction that has been made in the renewal reserve account.

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